REMARKS

This communication is in response to the first Office Action dated May 16, 2005. In that Office Action, the Examiner rejected claims 1-7 as being unpatentable over U.S. Patent No. 5,101,128 to Butler.

The Examiner argues that Butler shows an amplifier circuit that has two transistors. The Examiner acknowledges that Butler does not show that the two transistors have different threshold voltage implants. Nevertheless, the Examiner argues that although this limitation is not met:

> "it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the specific threshold voltage of the transistors, since they are based on the routine experimentation to obtain the optimum operating parameters." Page 2, Office Action of May 16, 2005.

This statement is not accurate and is unpersuasive. All of the prior art using opposed transistors to act as amplifiers teach that the transistors should be matched in any way possible. The Examiner has pointed to no teaching in any art that indicates that the transistors should be mismatched. This goes against all conventional design teachings.

It is only with the benefit of the present specification can the Examiner exercise hindsight and recognize the advantages of the present **intentional offset of threshold voltages.**

Indeed, the Examiner cites Figure 2 of Butler as teaching the present invention. Col. 1, lines 59-60 of Butler state that Figure 2 is essentially the same as Figure 1, except using JFETs. The circuit of Figure 1 will result in unbalanced current flow into the second

stage amplifier 2. See Col. 1, lines 47-50. In other words, Butler describes a circuit with unbalanced current flow.

In contrast, all of the pending claims require that the two opposed "transistors operate at substantially the same current." Thus, this limitation is not met by Butler for the simple reason that Butler does not contemplate different threshold voltages in the transistors. Butler teaches that the transistors should be the same threshold voltage.

For this reason, the claims as presented are not rendered obvious by Butler. There is not a suggestion to modify the structure shown in the Butler patent with a controlled offset as taught in the present invention. If this were done with the Butler circuit, this would result in an inoperable circuit.

The present claimed invention contemplates that the MOS transistors in the input pair **are running at the same current** and that there is negligible drift with temperature and across the production spread of the manufacturing process. As seen in Figure 1, a current source 105 feeds both of the input transistors. The claims recite such a limitation and thus are believed to be in condition for allowance.

The present claimed invention **uses transistors that are purposefully not matched**. One of the transistors has a different threshold implant, and in one embodiment, may have no threshold implant. It is respectfully submitted that a transistor without a threshold implant is fundamentally a different device than a transistor with a threshold implant. Thus, in claim 1 and in claim 6, the limitation where it states that the two transistors have different threshold voltage implants is not structurally met by the circuit shown in Figure 2 of Butler.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-0665, under Order No. 386168009US from which the undersigned is authorized to draw.

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Respectfully submitted,

By _____

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